

REMARKS/ARGUMENTS

In paragraph 1 of the Office Action, the Examiner has objected to the drawings because of the blank boxes in Figs. 2 and 3 and a required label for box 14 in Fig. 1. Reconsideration of the objection is respectfully requested.

Applicants enclose herewith replacement sheets for Figs. 1-3 showing the required labels.

In paragraph 2 of the Office Action, the Examiner objected to the drawings on the ground that the drawings do not show series converters and isolators. Reconsideration of these objections to the drawings is respectfully requested.

Applicants respectfully disagree with the contention that the series converters and isolators are not shown in the drawings. Specifically, Fig. 1 already shows voltage converters connected in series and in parallel. This is described in detail in the patent specification at page 6, lines 4-25. DC/DC converters 21 and 22 are connected in parallel to provide a 75V output to the first electrical supply line 30, and DC/DC converters 23 and 24 are connected in series to provide a 150V output to the second electrical supply line 32. DC/DC converters 25 and 26 are also connected in series for an output of 150V to the second electrical supply line 32, and in parallel with respect to DC/DC converters 23 and 24 to provide N+1 redundancy. To assist the Examiner, the electrical connections are traced in bold lines in an attached copy of Fig. 1.

In paragraph 3 of the Office Action, the Examiner has stated that the title of the invention is not descriptive, and that a new title is required to clearly indicate the invention to which the claims are directed. A new title has been supplied in accordance with the Examiner's requirement.

In paragraph 5 of the Office Action, claims 1, 2, 5, 13, 15, 19, 20, 22, 23, 28 and 29 were rejected under 35 U.S.C. §102(b) as being clearly anticipated by Takahashi et al., U.S. Patent No. 5,768,117. Reconsideration of the rejection is respectfully requested.

Independent claim 1 has been amended to include "a switching module associated with each voltage converter for interchangeably configuring the voltage converter with at least another voltage converter in series or in parallel, thereby configuring the required voltages to the first and second electrical supply lines." Claims 7, 8 and 10 have been canceled, without prejudice or disclaimer, as now redundant to amended independent claim 1. Independent claim 19 has been

AMENDMENT TO THE DRAWING(S)

Please find the enclosed replacement sheets for Figs. 1-3 and new Fig. 1A, with proposed amendments thereon, for the approval of the Examiner.

amended to include a step of “setting a switching module associated with each voltage converter so as to connect said voltage converter with at least another voltage converter in series or in parallel, thereby configuring the required voltages to the first and second electrical supply lines.” Claims 24-26 have been canceled, without prejudice or disclaimer, as now redundant to amended independent claim 19.

These features are not disclosed, taught or suggested in Takahashi et al. The ability to connect a voltage converter with at least another voltage converter in series or in parallel to configure the required voltages to the first and second electrical supply lines makes it possible to either manually or automatically configure the output from the converters as required by the loads, without a need to add further converters to the set-up. For example, output to one electrical supply line may be increased by reducing output to the other electrical supply line simply by switching connections. Thus, although not described in the description, dynamic automatic switching in real time in response to changing load requirements is possible.

In Takahashi et al., there are no switching modules associated with any of the converters, even though Fig. 15 shows more than one load. The connections in the power supply system are clearly hardwired for providing current to at most multiple but fixed loads. The set-ups in Takahashi et al. show only parallel arrangements and no series arrangements.

Since claims 2, 5, 13, 15, 20, 22, 23, 28 and 29 are directly or indirectly dependent upon one of independent claims 1 and 19, they are patentable over Takahashi et al. for the same reasons recited above with respect to the patentability of independent claims 1 and 19 over Takahashi et al.

In paragraph 6 of the Office Action, claims 1-5, 13-15, 18-23 and 29 were rejected under 35 U.S.C. §102(b) as being clearly anticipated by Yashiro, U.S. Patent No. 5,530,635. Reconsideration of the rejection is respectfully requested.

In Yashiro, in contrast to independent claims 1 and 19, there are no switching modules associated with any of the converters and there is only one load, (see Figs. 1 and 4 cited in the Office Action). The connections in the power supply system are clearly hardwired for providing current to the single generally fixed load. The set-up in Yashiro shows only parallel arrangements, and not series arrangements. Since claims 2-5, 13-15, 18, 20-23 and 29 are

directly or indirectly dependent on one of independent claims 1 and 19, they are patentable over Yashiro for the same reasons recited above with respect to the patentability of independent claims 1 and 19 over Yashiro.

In paragraph 8 of the Office Action, claims 6, 16, 17 and 30 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yashiro. Reconsideration of the rejection is respectfully requested. Since claims 6, 16, 17 and 30 are directly dependent upon one of independent claims 1 and 19, they are patentable over Yashiro for the same reasons recited above with respect to the patentability of independent claims 1 and 19 over Yashiro.

In paragraph 8 of the Office Action, claims 7-12 and 24-28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yashiro in view of Meyer et al., U.S. Patent No. 4,894,764. Reconsideration of the rejection is respectfully requested.

Claims 7, 8, 10 and 24-26 have been canceled, without prejudice or disclaimer, as previously mentioned.

Since claims 9, 11, 12, 27 and 28 are directly or indirectly dependent upon one of independent claims 1 and 19, claims 9, 11, 12, 27 and 28 are patentable over Yashiro for the same reasons recited above with respect to the patentability of Yashiro over independent claims 1 and 19.

In connection with Meyer et al., although Meyer et al. shows series connections for the converters, there is no demonstrable link to Yashiro, Takahashi et al., or the present invention. Furthermore, Meyer et al. relates to a set-up of a power plant and provides AC power to a public utility service and not to a machine, and, arguably, it relates to a different field. It is respectfully submitted that Meyer et al. does not use series connected converters to provide differing voltages to the various load circuits, as stated by the Examiner, (Office Action, page 5, lines 10-11). The various converters ultimately output power to a single utility line 157, (see Fig. 7), at a single voltage, not to separate electrical supply lines or to a machine. There are no switching modules associated with the converters for re-configuring the converters, from series to parallel to change power outputs.

New claims 31 and 32 have been added to provide claims covering a situation where a plurality of electrical supply lines supply a plurality of sets of components. An amendment to the

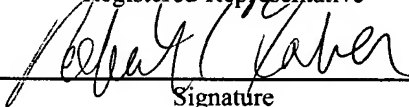
specification has also been made clarifying that the disclosure of two electrical supply lines is merely an example of a plurality of electrical supply lines.

In view of the foregoing remarks, the allowance of claims 1-6, 9, 11-23 and 27-32 is respectfully requested.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 27, 2005:

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Name of applicant, assignee or
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Signature

April 27, 2005

Date of Signature

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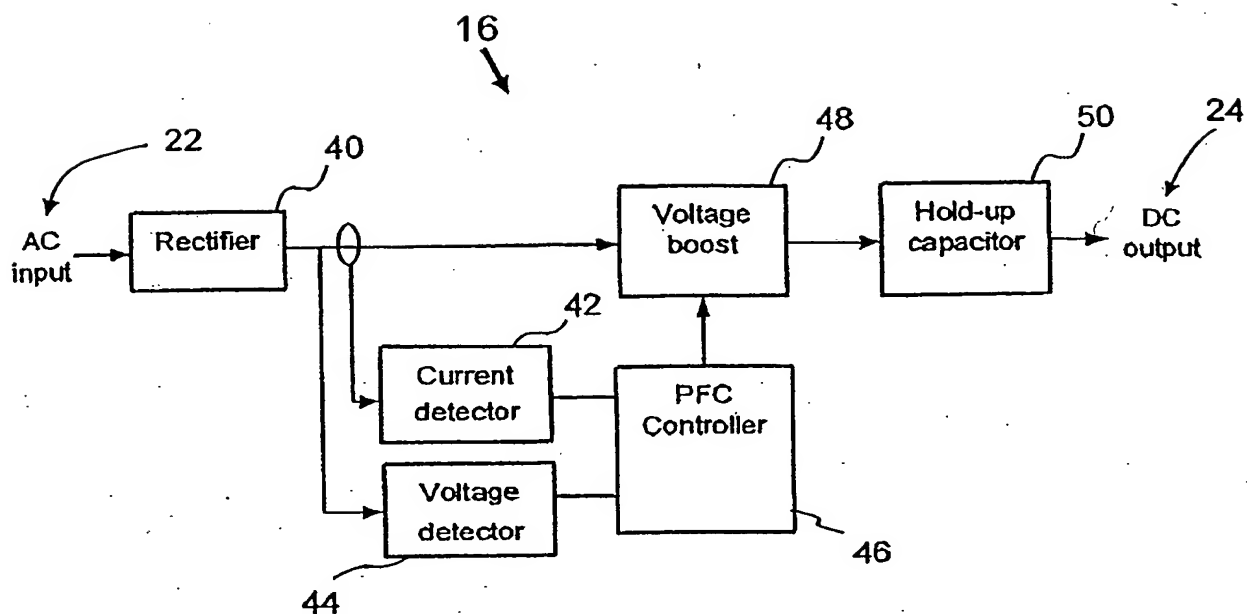


FIGURE 2

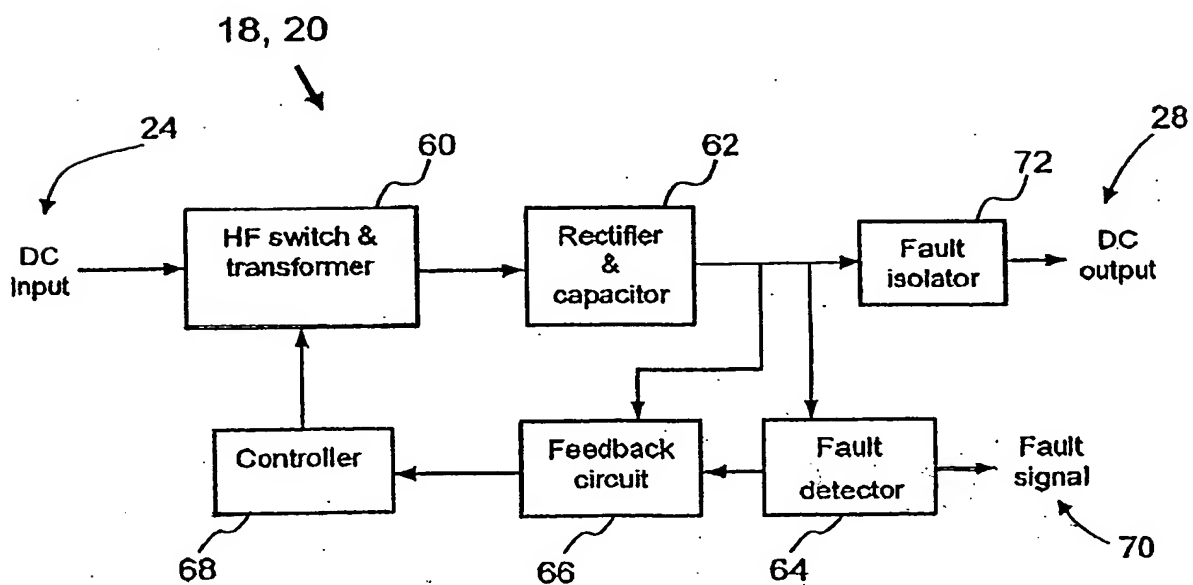


FIGURE 3

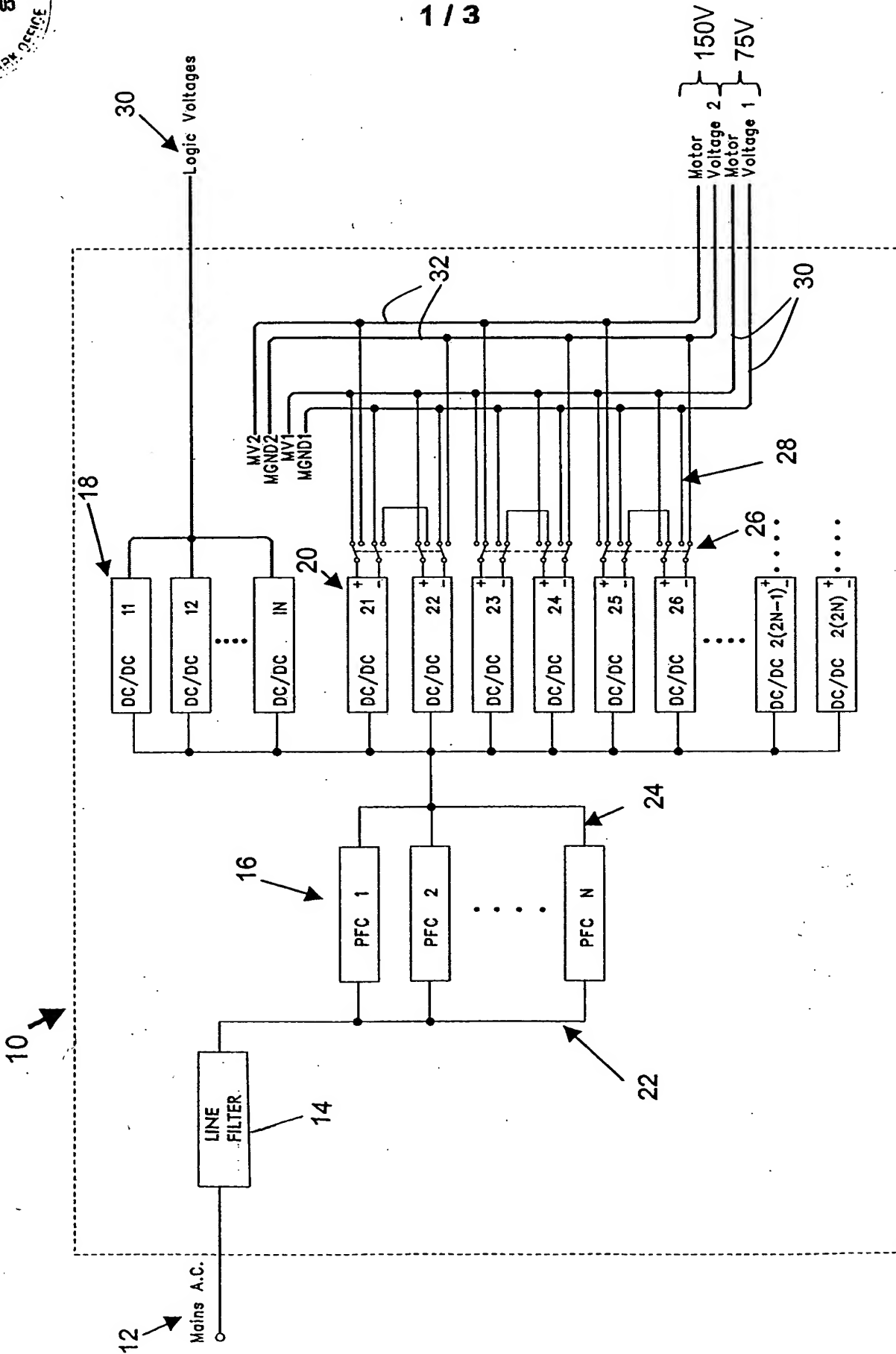


FIGURE 1